Research Project

Chronically Homeless People: Investigating substance use, history of TBI and the effect of a vocational intervention

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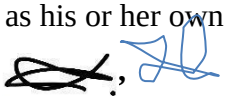
Signatures: 

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Table of Contents

Abstract

Chronic homelessness is a steadily increasing problem in the large cities of South Africa. One of the proposed contributing factors to the issue of homelessness is the high rates of traumatic brain injuries (TBIs) amongst the homeless population, which is exacerbated by drug and alcohol usage. This research makes use of a mixed-methods approach towards understanding the relationship between TBI and substance use in a sample of chronically homeless individuals, as well as to evaluate the effectiveness of a vocational intervention. We worked in conjunction with a non-profit organisation (NPO) called Khulisa/Streetscapes, through which we accessed the N=14 participants who completed a measure of alcohol and substance use (The Alcohol, Smoking and Substance Involvement Screening Test; ASSIST) and a TBI screening tool (The Comprehensive Health Assessment Tool; CHAT). Nine of these participants agreed to participate in a focus group where they discussed the effects of the vocational rehabilitation through Khulisa/Streetscapes on their lives, and what potential improvements could be made to the programme. Results showed that there is a high prevalence of TBIs, and a high frequency of substance use among the participants in our study sample. Despite high prevalence of both substance use and TBIs among the study sample, the relationship between the degree of substance use and TBI prevalence variables was not statistically supported ($p > 0.05$). The qualitative findings from this study, however, support the effectiveness of Khulisa/Streetscapes programme in its aims to reduce substance use among the homeless population and equipping them with the necessary skills needed for future employment.

Keywords: Chronic homelessness, TBI, substance use, mixed-methods, ASSIST, CHAT, vocational intervention

There has been a steady increase in the number of homeless people living on the streets of large cities throughout South Africa over the last few decades (Du Toit, 2010; Fromke, 2018). The concern is that much of this population is chronically homeless, meaning they do not have a home to return to and have lived on the streets for more than a decade (Nino et al., 2009; Sadiki, 2016).

Studies in developed countries have shown that rates of traumatic brain injury (TBI) are high among the homeless and contribute significantly towards higher levels of delinquent activity in this population (Cusimano et al., 2021). There is evidence that the risk factors closely associated with sustaining a TBI (violence, substance abuse and lack of adequate health care) align with the experiences of social exclusion, victimisation, and poverty of the chronically homeless population (Young & Hughes, 2019).

Further, research shows an association between both homelessness and TBI, and substance use, with an increased risk of both former factors among individuals who abuse substances (Hwang et al., 2008). However, more local research of this nature is needed (Carney et al., 2021). While prevention of drug and alcohol abuse is preferred, more research is needed into whether evidence-based treatment and rehabilitation are effective in reducing delinquent activity, including excessive substance use, among the homeless (and the chronically homeless at that), especially within the South African context (Young & Hughes, 2019) where homelessness, substance use and TBI are rife. We discuss each of these issues and the interrelationships between them, below.

Homelessness

Street homelessness, as defined by Naidoo (2010), is a form of homelessness in which people do not have adequate housing, meaning they live on the streets. The current study does not focus on those homeless people who return to various forms of housing after a period, but rather on the chronically homeless who remain homeless for a longer period of time (over a decade), with no other home to return to (Nino et al., 2009; Sadiki, 2016). When reviewing this literature, the increase in homelessness is not solely a South African problem, as even many developed countries have recently seen an increase in homeless populations as refugees are displaced and people are forced out of poorer countries in search of jobs (Roy et al., 2016). The lack of housing leaves the chronically homeless population at risk of emotional, sexual, and physical victimisation from early childhood, throughout adolescence, and into adulthood (Cusimano et al., 2021). This population is generally considered to be in their middle adulthood years (40-65) and have experienced long periods of unemployment

while struggling with various physical and mental health issues due to poor and unreliable government health care systems (Sadiki, 2016). Age, and lack of healthcare and shelter, may leave this population susceptible to a prominent health issue that many of the chronically homeless face, which is TBI (Young & Hughes, 2019).

Traumatic brain injury

TBI refers to physical traumatic injury to the brain as a function of acceleration, deceleration and rotational forces applied to the head, that can often negatively affect an individual's cognitive, emotional, and behavioural functioning and regulation (Anderson et al., 2019). There are three major TBI severity categories, which are most often measured using the Glasgow Coma Scale using a score out of 15 (13-15 (mild), 9-12 (moderate) and 8 or below (severe)), duration of loss of consciousness, and length of post traumatic amnesia (a period of disorientation and confusion post-injury; Sherer et al., 2008).

Traumatic brain injury and homelessness

TBIs are strongly associated with issues that homeless individuals experience daily, such as social exclusion, victimisation, and poverty. Such issues are reported to begin in childhood and are perpetuated into adulthood (Young & Hughes, 2019). International studies assert that TBI exposure during childhood is recognised as a risk factor for homelessness in adulthood (Carney et al., 2021). TBI is not only an issue for the homeless, as there are high rates of TBI in the general population in South Africa (Webster et al., 2015). However, evidence shows that a more substantial number of homeless people may have sustained a TBI in their lifetime when compared to the rest of the population (Mackelprang et al., 2014). Globally, the prevalence of TBIs of any severity among the homeless is estimated to be 53.1%, with 22.5% sustaining moderate to severe TBI (Fitzgerald, 2020). Stubbs et al. (2019), however, acknowledge that TBI diagnostic reports among the chronically homeless are not widely accessible due to their unstable living conditions; thus, it is difficult to accurately measure prevalence in a large population. Given the range of sequelae that individuals experience post-TBI (e.g., cognitive, behavioural, and emotional; Fitzgerald, 2020), this underscores the need to conduct studies that evaluate the prevalence of TBIs and such outcomes among the chronically homeless. One such post-TBI associated outcome is substance use.

Traumatic brain injury and substance use

The association between TBI and substance use has long been established (Ommaya et al., 1996), with more recent research demonstrating the increased risk of both

homelessness and TBI among individuals who abuse substances (Hwang et al., 2008; Song et al., 2018). First, there is an increased risk of sustaining a TBI if one is under the influence of alcohol or drugs due to an increased likelihood of particular mechanisms of injury (e.g., falls and assaults (Cusimano, et al., 2021). Second, and in turn, TBIs frequently affect the frontal lobes / prefrontal cortex of the brain which are responsible for controlling and managing behaviour through executive decision-making processes that promote socially appropriate behaviour (Zillmer et al., 2008). Further, with damage to this neuroanatomical area, there is a decrease in basic social skills, as well as an increase in impulsive and externalising behaviours (Schofield et al., 2006; Webster et al., 2015). Given high reported rates of TBI in the homeless population, there is a greater risk of impulsive behaviour which may increase their substance usage.

Homelessness and substance use

Extensive literature describes a clear association between homelessness and substance use, however there is a dearth of research on this topic in low- to middle-income countries like South Africa (Carney et al., 2021). In their recent study, Carney et al. (2021) found that length of homelessness was not significantly associated with current drug or alcohol use when they controlled for substance use throughout the lifetime, and source of income, but noted that further research was required to investigate other factors that impact substance use in this population. Although there is not a substantial body of literature examining this association, local studies do highlight various reasons why homeless people may engage in substance use, with one of the most frequently cited reasons being that it is used as a coping mechanism (Fromke, 2018). The lack of adequate physical and mental health care services this population has access to also mediates the relationship between substance use and chronic homelessness (Han et al., 2003).

Chronic homelessness, traumatic brain injury and substance use

Homelessness in South Africa is fast becoming an issue of great concern (Roets et al., 2016). Another major issue in the country is TBI; rates of TBI in the country are purported to be higher than in high income countries due to contextual vulnerabilities here (Webster et al., 2015). As noted, homeless individuals frequently sustain TBIs. The association between TBI, substance use, and other delinquent behaviour is reportedly rife among the chronically homeless in many different developed countries (Cronely et al., 2015; Stubbs et al., 2019; Young & Hughes, 2019). Such associations make one wonder about rates of TBI in our

homeless population in South Africa and its association to substance use in this population. No local study of this nature currently exists.

In sum, homelessness is linked to both TBI and substance use, which in turn are also associated; however, studies of this nature – which investigate all three variables in the same sample - are limited. This further emphasises the importance of filling this gap in South African literature, while also stressing the need for effective interventions for the chronically homeless (Phiri & Perron, 2012).

TBI, homelessness and substance use: Effective interventions

Individuals with TBIs and especially those with a history of substance use require tailored interventions to aid in their eventual reintroduction into society. Moreover, chronically homeless people who have sustained TBIs (and who may therefore be susceptible to substance use) belong to a high-risk community and may benefit most from holistic intervention programmes that are tailored to their needs (Leclair et al., 2020; Topolovec-Vranic et al., 2017). Interventions for this high-risk community would need to be tailored to accommodate potentially difficult behavioural patterns that may result from TBI and substance use exposure (Hwang et al.,2008). Recognition of TBI emphasises the need for improvements in the prevention and intervention research programmes for this group of high-risk individuals (Maas et al., 2017). There are no published studies in South Africa on the efficacy of interventions for the chronically homeless and for those who have sustained TBIs, highlighting the need for research in this area. Similarly, there is also a dearth of literature on evidence-based interventions focused on helping reduce or manage substance use addictions among the chronically homeless population from an international and South African perspective (Stein, et al., 2008).

One such intervention provided by Khulisa/Streetscapes, a non-profit organisation (NGO) in South Africa, includes a rehabilitative work programme for chronically homeless people with a history of substance abuse. Khulisa/Streetscapes has developed a vocational intervention program with the aims of reducing substance abuse in this population by enhancing social services. The organisation focuses on providing supported employment, psychosocial support, and housing for their participants. Rates of TBI and the effect of this intervention on rates of substance use among the chronically homeless enrolled in Khulisa/Streetscapes's vocational intervention program is yet to be established (Khulisa, 2021).

Rationale

Chronic homelessness is a social issue which leaves affected individuals vulnerable. Research suggests that TBIs frequently occur among homeless individuals, which may compound their vulnerability. Research also shows that TBIs amongst the chronically homeless exacerbates the issue of delinquent behaviour such as substance abuse among this marginalised population. Further, substance use may also increase the risk of TBI. Although there is a growing body of research and literature on these issues internationally, there is limited information from a South African context regarding the three core variables: chronic homelessness, TBI and substance use. The prevalence of TBIs among the homeless and the associated substance use issues, emphasise the need to conduct TBI screenings to help create holistic rehabilitative interventions to effectively reduce such behaviours. Interventions for this population are offered locally by NGOs in South Africa; however, research into the effectiveness of such interventions is yet to be established.

Aims and Hypotheses

The aim of this research study was four-fold. First, we aimed to investigate the frequency of risk of substance use in a sample of chronically homeless individuals. Second, we aimed to investigate the prevalence of TBI in the same sample. Third, we aimed to investigate whether there was a relationship between a history of substance use and a history of TBI in this sample. Last, we aimed to explore the effectiveness of the vocational intervention in which these individuals are currently participating at Khulisa/Streetscapes, in decreasing their use of substances. For our aims, we hypothesised that:

1. There would be a high level of risk among the chronically homeless in terms of substance use.
2. There would be a significant association between history of substance use and history of TBI.

The second and fourth aims were exploratory and there were therefore no associated hypotheses.

Theoretical Framework

There are numerous theoretical frameworks that we made use of as a foundation for this research and to answer our investigative questions. Situational opportunity theory surrounding delinquency is one of the theories we have used to conceptualise our research

investigation. Situational opportunity theory of crime acknowledges the significant role that environmental factors play in promoting or creating opportunity for engaging in delinquent behaviours (Wilcox & Cullen, 2018). The theory asserts that opportunities to engage in such behaviours are greatly influenced by social and physical situations these individuals find themselves in. This theory helped us develop an in-depth understanding of factors that influence such delinquent behaviour, and how changes in an individual's social and physical environments may reduce opportunities for such behaviour, such as the vocational intervention offered by Khulisa/Streetscapes.

Our research study also focused on using theories of planned behaviour and self-efficacy in establishing a comprehensive knowledge and understanding of the potential effects Khulisa/Streetscapes's vocational intervention may have had on reducing delinquent behaviours, such as substance use, among individuals engaged in the intervention, from their perspective. The theory of planned behaviour refers to when individuals are likely to behave in an intentional manner, and reporting that these behaviours align with their attitudes and subjective norms when behavioural control is high (Hagger et al., 2022). Self-efficacy theory is defined as the intention, initiation and persistence at behaviours that help people successfully cope with their environment and various challenges that may come their way (Maddux, 1995). Having the ability and skill to effectively and intentionally transform behaviours and its resultant outcomes motivates individuals to seek similar success given their efforts towards the process (Guarnaccia & Henderson, 1993). These two theories aided us in synthesising the results of our investigation.

Method

Design and Setting

Design

The study design was mixed methods. We collected, analysed, and integrated research findings using both qualitative and quantitative methods (Tashakkori & Creswell, 2007). Aims one, two and three were addressed quantitatively and aim four, qualitatively.

The aim of the quantitative component of the study was to collect data on the prevalence and severity of TBIs and the rates of substance use. This was done using semi-structured interviews that were guided by relevant questionnaires (see measures). We refer to this part of the study as the Questionnaire component.

The aim of the qualitative aspect of this research study was to obtain a holistic and thorough explanation of a particular issue based on the beliefs, attitudes, behaviours, or experiences of individuals belonging to a certain group (in this case, chronically homeless individuals; Salmons, 2015). In the case of the current study, we made use of a focus group of participants to qualitatively assess their experiences since being involved in the Khulisa/Streetscapes intervention programme and their subsequent substance usage. We refer to this part of the study as the Focus Group component.

Research paradigm

Concerning the qualitative Focus Group component of this study, we chose to use thematic analyses. Additionally, we made use of a sequential exploratory design that focused on using qualitative methods to explain the quantitative results of aims one, two and three (the Questionnaire component). This research paradigm includes a qualitative phase that involves collecting the data before quantifying it during the analysis process (Bartholomew & Brown, 2012).

Setting

We took care to investigate our questions with the help of an NGO named Khulisa/Streetscapes. Khulisa/Streetscapes has been mobilised to provide interventions that aim to get individuals off the streets to integrate them back into society and reduce substance use and crime in this population. Organisations like Khulisa/Streetscapes aim to adopt various integrated rehabilitative approaches to holistically treat and strengthen community cohesion and development (Khulisa, 2021). Khulisa/Streetscapes helps the homeless get placed in homes as soon as they have committed to the programme.

Individuals are placed in specific homes depending on their time in the programme, as well as their level of substance use. When they first join the programme, they are placed in a home close to the main garden in the District Six area of Cape Town. At this home they are given two meals a day and they are also given regular counselling for drug usage. If they are willing, then they join the Matrix programme which is a drug rehabilitation programme for users of various drugs. Once they have successfully overcome their addictions, they are moved to a house owned by the YMCA. Here they are given a bit more independence and are not as closely monitored as they are in the house at District Six. Those living in these homes are transported to work in the main garden situated in the Gardens area of Cape Town. Khulisa/Streetscapes also owns a second garden in Kuils Rivier. There is a home at the garden there which houses a few of the previously homeless clients who have been part of the

programme for an extended period of time (3+ years). They work on the farm at Kuils Rivier and are provided three meals a day.

The first three interviews took place at the home in Kuils Rivier with participants who live there. The next four interviews took place at the home in District Six while the last seven interviews took place at the main garden in Gardens. The focus group also took place in a room at the main garden. Thus, both components of the study were conducted in settings that were known by and comfortable for the participants.

Participants

We used nonprobability sampling in the study. The participants in this study were chosen using a purposive type of nonprobability sampling which entailed selecting individuals that best represent the characteristics or attributes needed to be assessed (Babbie, 2016). Khulisa/Streetscapes acted as the intermediary channel between the researchers and the potential participants, in order to protect them. In communicating with potential participants, they identified all possible participants for the study who met the inclusion criteria. For the Questionnaire component, we interviewed 14 participants from Khulisa/Streetscapes; all the potential participants who agreed to participate in the current study. For the Focus Group component, we had eight participants (of the previous 14) who agreed to participate.

The sample was obtained through the Khulisa NGO's flagship programme, Streetscapes, which has around 120 people of various ages currently in the program. Originally only a subsample of this group of individuals who have been in the program for over 3 years and were off the street (one of the inclusion criteria determined with Khulisa/Streetscapes as a focus for this study to assess the effectiveness of their intervention), were included in the study. However, because this inclusion criterion yielded less than 10 participants, we also included those individuals who had been in the programme for over 6 months and were off the street, which drew in a few more participants. Further inclusion criteria were that participants were considered chronically homeless, that they were currently enrolled in a vocational program at Khulisa/Streetscapes, that they were willing to participate, and consented to participating, in the study, and that they could communicate in English or Afrikaans (given that the researchers were only able to communicate in and understand these languages). There were no age or sex limitations to the criteria.

Measures

Screening Measures.

The following measures were used in the Questionnaire component of the study

Comprehensive Health Assessment Tool. The Comprehensive Health Assessment Tool (CHAT) is a standardised measure that can be used to screen for issues related to physical health, mental health, TBIs and learning difficulties and disabilities. However, for the purpose of this study, it was used to screen for TBIs (see Appendix A; Williams et al., 2010). The CHAT is a semi-structured interview, which is well suited to the needs of the homeless who may be unable to participate in written assessments due to their educational background. We used the CHAT to help determine the prevalence (if there had been multiple) and severity of TBI among this chronically homeless sample. The CHAT has high reliability and validity in assessing the history of TBI (Chitsabesan et al., 2014).

Alcohol, Smoking, and Substance Involvement Screening Test. We also made use of the Alcohol, Smoking, and Substance Involvement Screening Test (ASSIST, see Appendix A), a self-report questionnaire which aids in assessing the level of substance use. It is an 8-item questionnaire with many sub-items that screens for a variety of substances. including tobacco, alcohol, marijuana, cocaine, amphetamines, inhalants, sedatives, hallucinogens, opioids and other. It is used to determine the risk score of each substance 3 months prior to the test and assesses the potential problems that are the result of substance use. It is noted to have high levels of reliability and validity (a =.83, KMO =.77) and is considered applicable to various population groups as it was designed to be culturally neutral (see Appendix A; Humeniuk et al., 2010).

Interview schedule. We put together a brief interview schedule for our Focus Group component (see Appendix B). These questions were used to guide the whole group process.

Procedure

We received ethical approval from the Research Ethics Committee of the Psychology Department at the University of Cape Town (see Appendix C) and Khulisa/Streetscapes (see Appendix D) to conduct this study. Three social workers from Khulisa/Streetscapes contacted the potential participants who met the inclusion criteria. Those who expressed interest in participating in the study then met with us to be formally invited to join the study and to take part in the interview process. We reviewed information about the study with the potential participants and what would be asked of them, should they agree to participate. We understood that the participants we were working with may have had a limited educational

background and could possibly be illiterate. To accommodate this, we obtained ethical and informed consent from the participants by providing consent forms that were communicated to them verbally (in an interview style). If they agreed to join the study, they were then asked to sign consent forms (see Appendix E) before we commenced testing.

The form communicated what would be happening during the testing process and what we would do with the results. The assessments were done in either English or Afrikaans, depending on the participants' preference. The informed consent form and measures were translated into Afrikaans by the Stellenbosch language lab through a process of forward and backward translation and an authentication process. We also made use of a translator to facilitate the interviews for those participants who preferred to communicate in Afrikaans and to ensure that we understood the participants completely and that we were communicating effectively (even though we understood conversational Afrikaans). All of the interviews were recorded (with permission) for the purposes of transcription at a later stage.

Questionnaire component

We obtained approval from Khulisa/Streetscapes (see Appendix D) to utilise a room in their main garden in the Gardens area in Cape Town. We decided on this space as it was accessible to and familiar to participants. We used this room to screen the participants and to ensure that there were as few distractions for them as possible. In addition to using this space, we also interviewed some of the participants at the homes they are currently residing in, in Kuils Rivier and District Six, if they were unable to travel to Khulisa/Streetscapes's main garden. Before commencing with the questionnaires, we inquired about whether participants preferred to be interviewed in English or Afrikaans. We then proceeded with the administration of the ASSIST (to assess history of substance use), followed by the TBI section of the CHAT (to collect data on the participants' history of TBI and severity; see Appendix A) in accordance with their language preference. After the completion of the interviews, we provided the participants with a R50 shopping voucher as a token of our gratitude.

Focus Group component

After we completed the Questionnaire component (interviewed all individuals who met the inclusion criteria from Khulisa/Streetscapes, who expressed interest in participating), we set up a separate session for those participants who agreed to be part of the focus group. Here we made use of the interview questions (see Appendix B) we constructed to guide us in assessing how the vocational intervention that participants were enrolled in at

Khulisa/Streetscapes, had impacted their lives,in particular, substance use and homelessness. We recorded this session so that we could transcribe it for later use. We also gave participants the opportunity to ask any questions they had pertaining to the study and its potential outcomes. Those who took part in the focus group received another R50 shopping voucher, as well as lunch that included pizza and soft drinks.

Data Analysis

Quantitative (Questionnaire) component

We used descriptive statistics and graphs to analyse our results for the Questionnaire component of the study, with regards to the level of risk of substance use and reported rates of TBI. Goodrick and Rogers (2015) note that descriptive analysis methods are used to show how concepts, theories and ideas are related by categorising and displaying them in tables or diagrams. We also used a Wilcoxon's signed rank test, which is a non-parametric repeated measures test, to determine differences in terms of substance use before and after joining the Khulisa/Streetscapes programme. Last, we used Pearson's correlation analyses to investigate associations between number of TBIs and degree of substance use in the sample.

Qualitative (Focus Group) component

We employed a data analysis method that reduced open-ended responses taken from the focus group into a more decipherable manner (Castleberry & Nolen, 2018). Thematic analysis allowed us to make inferences about our exploratory aims by identifying and reporting any significant commonalities based on the data we collected from the focus group interviews (Braun & Clarke, 2006). The 6 main steps of thematic analysis are: (1) familiarisation, (2) coding, (3) generating themes, (4) reviewing themes, (5) defining and naming themes, and (6) writing up (Braun & Clarke, 2006).

By using thematic analysis, we became familiar with the data and we were able to identify and extrapolate themes from the answers the participants shared. Thematic analysis aided in defining and reviewing these themes to conclude the effectiveness of the Khulisa/Streetscapes programme. This type of analysis is useful as it helps to identify patterns across the data in terms of the participants' lived experiences, behaviours, and views (Braun & Clarke, 2006).

Ethical considerations

Consent forms and ethical approval

Ethical approval for the study was first obtained from the University of Cape Town and Khulisa/Streetscapes before any testing and screening commenced. As noted, we

provided the eligible participants with consent forms (Appendix E) which they completed if they wished to partake in the research. The informed consent form outlined the purpose of the study, what was required of participants, and any potential risks and benefits. These consent forms were presented to the participants in an interview style to ensure that they were able to comprehend the content, especially for those who were unable to read.

Confidentiality, anonymity and voluntary participation

The consent form also described how confidentiality would be maintained, and that the data we gathered would be anonymised. We also reiterated that participants' involvement in the study was voluntary and that they could withdraw from the study at any time without penalty. We received permission from all the participants to record the interviews and focus group discussion so that we could transcribe the recordings later.

Potential risks and benefits

We understood that there were potential risks to participating in the study. One of these risks was that due to the nature of the questions being asked, participants may have experienced some anxiety and distress during or after the data collection process. We ensured that all participants were made aware of counselling and possible assessment services available to them, while their social workers also knew that they were taking part in the study (Appendix F). We also realised that these participants, due to the increase in studies on homeless individuals, may experience some participation exhaustion so as a courtesy to them we provided refreshments and allowed them to take breaks if they desired, given that they were giving up their time to participate in potentially long interviews with us. There are no direct benefits to participating in the study, but the research contributes to potentially improving interventions such as these in the future by better accounting for the complex issues this marginalised population experiences.

Remuneration

Participants received a R50 food shopping voucher for each component of the study they participated in as a token of appreciation for their time. They also received lunch after the Focus Group component.

Debriefing

After each interview and focus group session was complete with the participants, they were given space to ask questions which they may have had pertaining to the study or data.

Reflexivity

Reflexivity is a common limitation for researchers conducting qualitative research studies as it refers to the issue of objectivity and how it impacts the research process. Flanagan Jr (1981) acknowledges the potential issues that may arise when a researcher is not aware and mindful of how their own assumptions and biases affect the research process. It is noted that researchers are potentially at risk of imposing their subjective feelings or opinions regarding the explanation and predictive aspects of the study (Macbeth, 2001). As researchers, we aimed to employ every effort to be mindful of our assumptions and biases during the data collection and data analysis processes. Maintaining this level of mindfulness helps accurately account for the results and interpretations of the study as it lends the study more credibility and validity (Dodgson, 2019).

Results

The results of the Questionnaire and Focus Group components will be presented here to explore the four research questions and hypotheses represented for the current study.

Participants

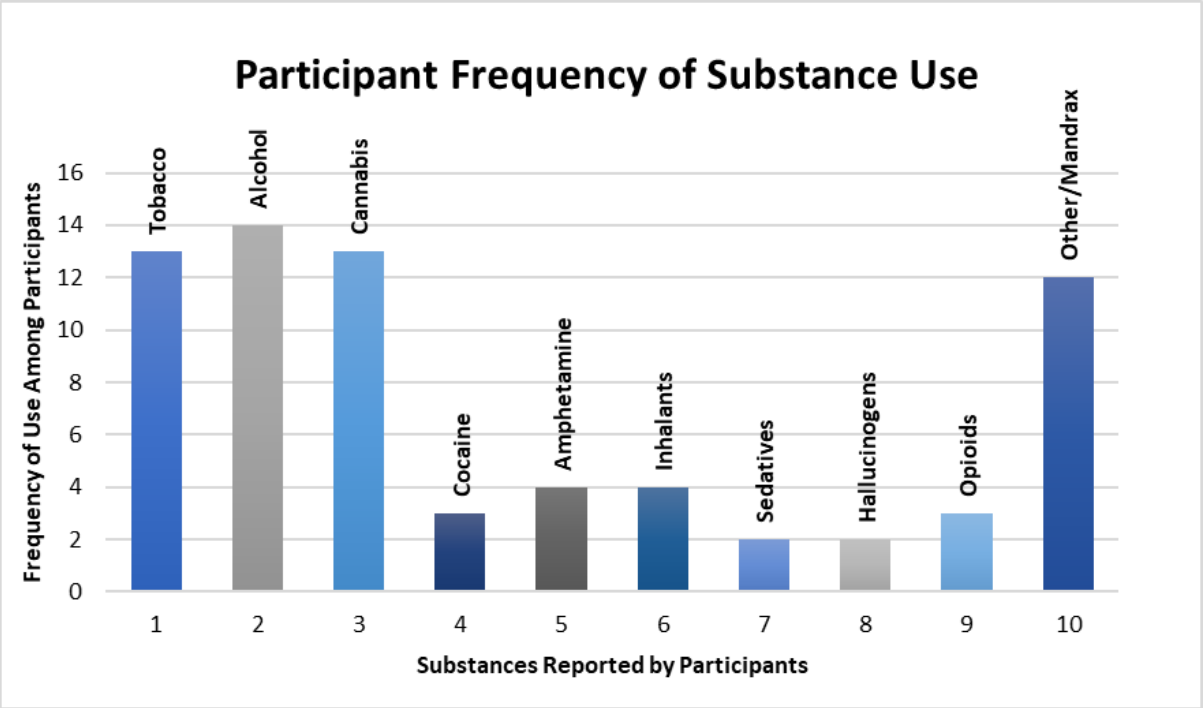
We interviewed *N*=14 participants using the ASSIST and CHAT screening tools for the Questionnaire component. Further, nine of these 14 individuals participated in the Focus Group component. Among the 14 participants, (mean age = 45; range: 33-58; SD= 8.7), most of the participants were female (8/14; 57%) and English-speaking (9/14; 64%). Given the limited sample size, we present detailed background information on each of the 14 participants in Appendix H, which addresses demographics, history of TBI and substance use.

Questionnaire component

Frequency of substance use

Figure 1 shows that after tobacco, alcohol, and marijuana, Tik and Mandrax were the two most commonly used drugs amongst the participants before their involvement in the Khulisa/Streetscapes programme. Over 86% (12/14) of the participants had used Mandrax or Tik while living on the street. The number of users for each substance while homeless can be seen below in Figure 1.

Figure 1



Relative to their frequency of substance use before entering the Khulisa/Streetscapes programme, when we asked participants about their usage in the past three months, only 21% (3/14) participants still reported using these substances. Two of these participants used the drugs on a monthly basis, while the other participants used it on a more regular weekly basis. Figure 2 shows the number of substances used by the participants before (blue) and after (orange) joining the Khulisa/Streetscapes programme. Other than participants 10 and 11 (whose substance use was already relatively low before joining the programme), every participant showed a significant decrease, at least descriptively, in their substance use since joining the programme. Table 1 shows that the difference in substance use before and after (or during) the Khulisa/Streetscapes intervention was statistically significant ($p<0.05$).

Figure 2

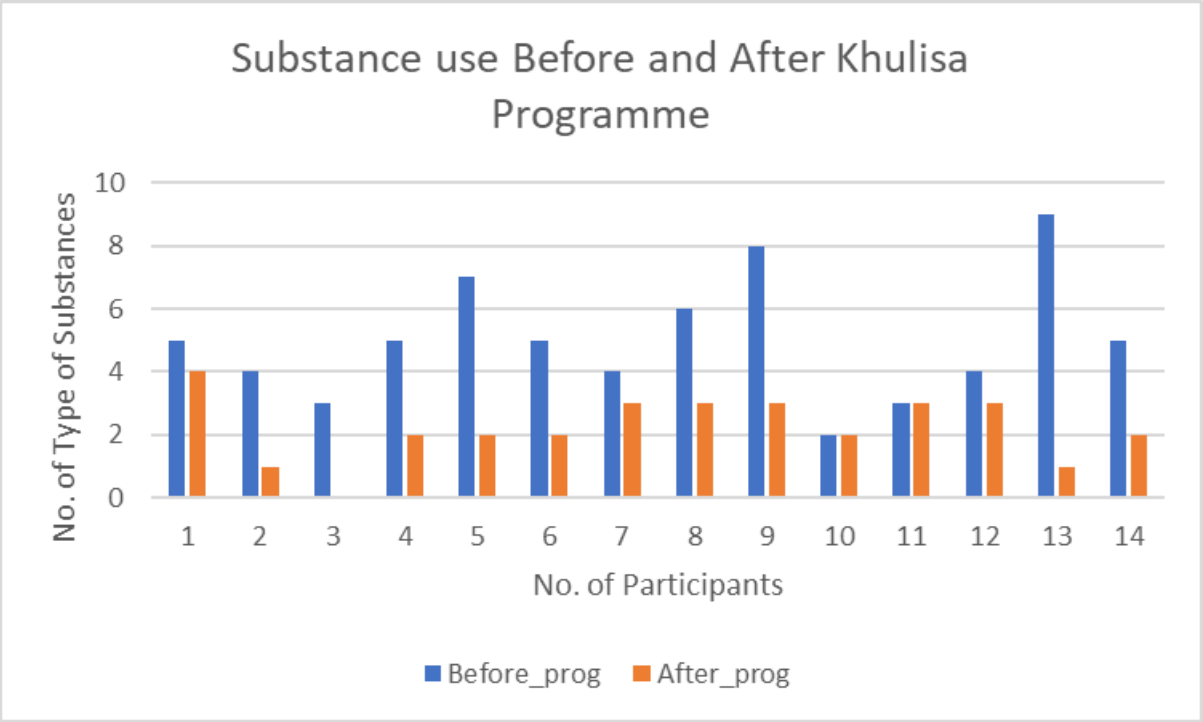


Table 1

Within-group comparisons for frequency of substance use before and after the Khulisa/Streetscapes programme (N = 14)

		Range	Mean rank	Std. Deviation
Substance use (frequency)	Pre-intervention	10-16	5.00	1.961
	Post-intervention	11-18	2.21	1.051
	Z	-3.108		
	p	.<001*		

*Note.*Test Statistics illustrating the Z-score and p-value. *p = < .05

TBI mechanisms, prevalence, and severity

As can be seen in Figure 3, there are three mechanisms of TBI which are most common amongst this sample of homeless individuals, namely being struck by/ against an object, because of fights/assaults, or due to sober/drunken falls.

In our sample a total of eight TBIs were caused by fights or assaults and the same number of TBIs were the result of being hit by an object. These objects varied from beer bottles to bricks, with one participant sustaining a particularly severe TBI where they were struck by an iron rod in the back of the head during a fight. Thus, the majority of these TBIs are as a result of brawls while the participants have been living on the streets. Some have also come from abuse from parents and other adults, as well as from abusive partners.

The most common mechanism of TBI in this sample was falls while sober or drunk. Nine of the TBIs were caused by this mechanism, with many having difficulty in recalling these events due to the combination of being under the influence and sustaining the TBI.

Figure 4 shows that among the 14 participants, there was only one participant who reported that they had not sustained a TBI in their lifetime; in other words, 93% of participants reported having sustained at least one TBI. We also found that when looking at the number of TBIs sustained by each participant, 69% (9/13) of the participants who had sustained a TBI had sustained multiple TBIs, ranging between 3-6 TBIs. Participants 6,10, 13 and 14 all sustained a minimum of five TBIs with participant 14 having sustained the most TBIs in our sample with six.

Figure 3

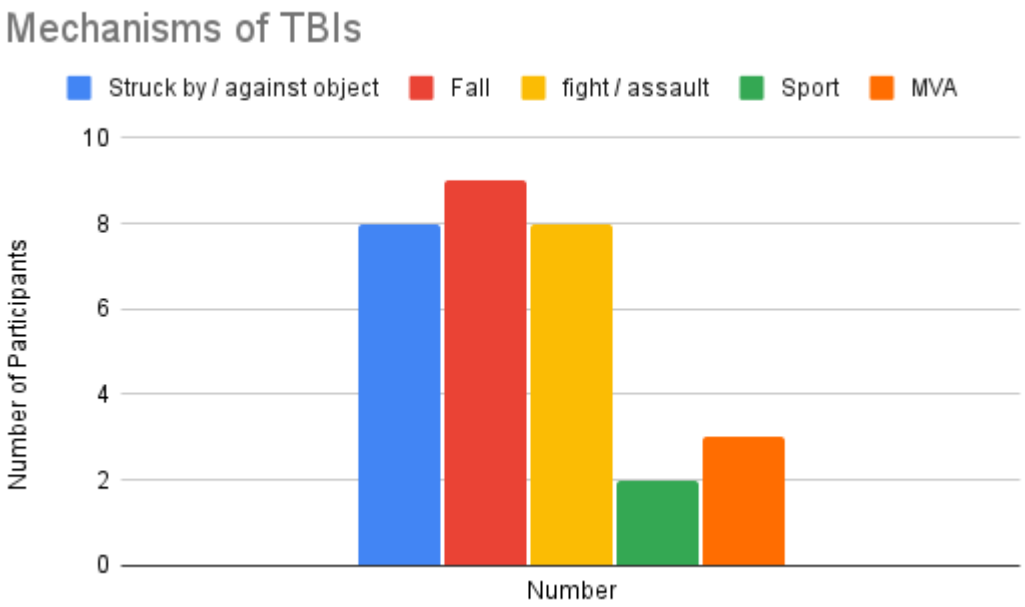
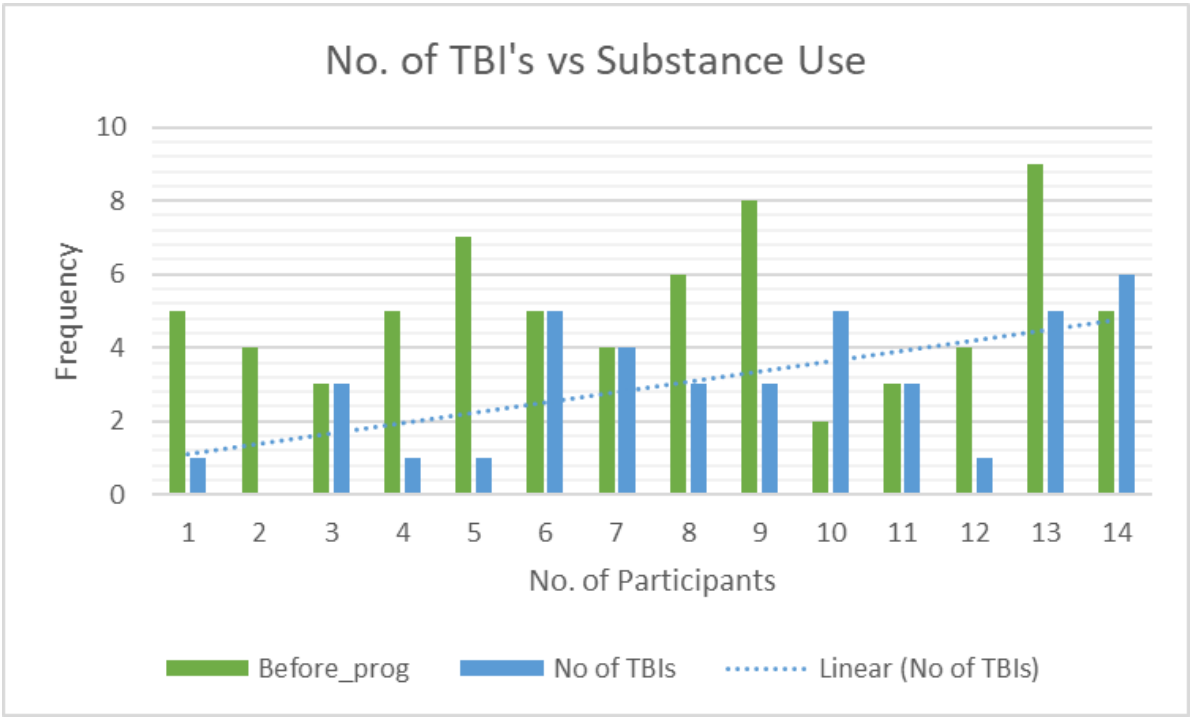


Figure 4

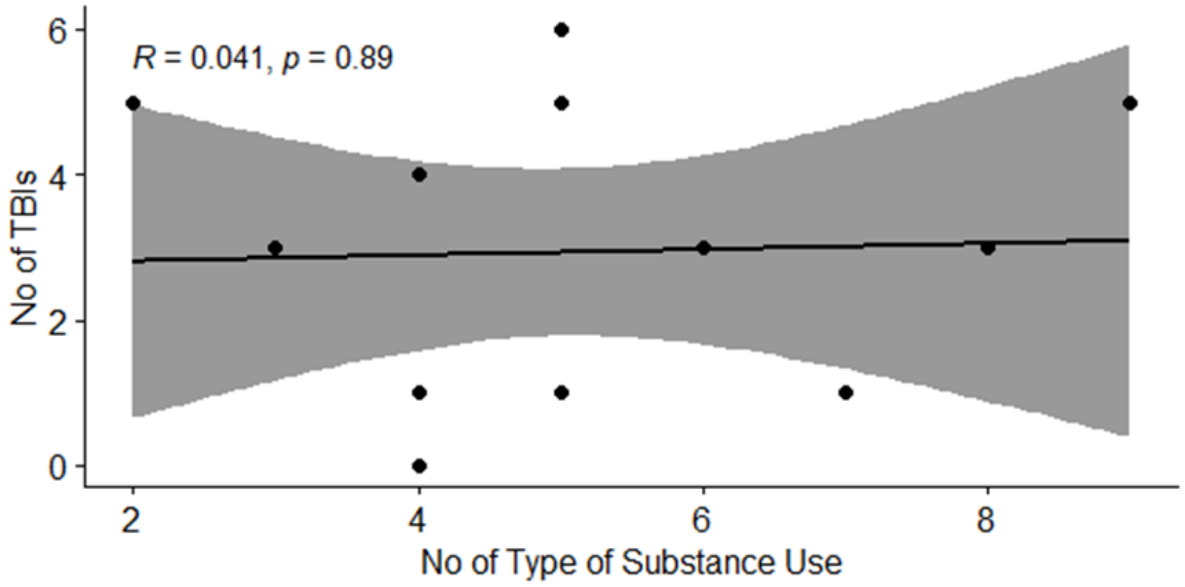


In terms of the severity of these TBIs, only 15% (2/13) participants who had sustained TBIs reported that they did not experience any feelings of being dazed or confused after the incident. On the other hand, just under 50% of the participants who had sustained TBIs said that they had lost consciousness for varying amounts of time, with the most severe of these incidents resulting in the participant being unconscious for more than 24 hours. In this case, the participant had been beaten in the head with an iron rod by three other homeless people, and the participant awoke in the hospital over a day later. Less than 25% (4/14) of the participants sought medical attention at a hospital.

TBIs and substance use

Figure 4 also shows the number of TBIs reported per participant and the number of substances used before the program. Just under 65% of the participants reported that while they were under the influence of alcohol and/or drugs they had fallen and hit their heads on the ground. However, 75% (9/12) of the participants sustained multiple TBIs and not all of these were substance related. Pearson's correlation analysis between the number of TBIs sustained among the participants in the sample and the number of different substances they reported using before joining the Khulisa/Streetscapes programme was not significant (r = 0.041; p = .889) Figure 5 confirms that the two variables have a negligible relationship. Figure 5 presents ggplot graphical confirmation of the lack of correlation between the number of TBIs the participants sustained and their level of substance use before joining the Khulisa/Streetscapes programme.

Figure 5



Focus group component

The following themes from the focus group component emerged and were integrated with the results of the Questionnaire component.

Theme 1: Substance use management

Participants in the study described that Khulisa/Streetscapes helped them in terms of managing their use of substances. For example, participant 1 below talks about how joining or being part of Khulisa/Streetscapes programme as someone who was homeless, changed their lives in terms of substance use addiction and the way they related to other people or in terms of behaviour management. Although participant 8 mentions that he still enjoys drinking alcohol, she further expresses that since joining the Khulisa/Streetscapes programme, she has managed to cut down on her drinking and no longer depends on alcohol daily ("*I still drink alcohol and enjoy myself but it is not like in the streets, when I needed it daily*").

These findings suggest that Khulisa/Streetscapes is an effective programme in terms of helping homeless people who may present with TBI and substance use addiction, and help manage their substance use. Moreover, findings from the study are consistent with previous literature, for example, a South African homeless appraisal study conducted by Roets et al. (2016) on how programs should cater for homeless people with substance use addiction.

The results from the focus group also indicated, in line with the literature, that substance use is a prominent issue among homeless people in South Africa (Young & Hughes, 2019). However, consistent with literature, one of the most important criteria needed for developing an effective intervention programme for homeless people with substance addiction is to include rehabilitation strategies (Young & Hughes, 2019; Roets, et al., 2016).

When the participants were asked about their usage of alcohol, marijuanna and Mandrax/Tik use in the past 3 months, 71% (10/14) participants still consume alcohol, 43% (6/14) participants still use marijuanna, and 21% (3/14) participants still use Mandrax/Tik. When comparing the number of participants who partook in the three main substances listed above with the number of participants who still partake, results show that the rate has decreased since joining Streetscapes. We include relevant excerpts from participants, below.

Participant 1: *"I am really glad that I joined streetscapes because when I was on the streets, I was feeling there's no hope for me, so when I met Khulisa and Streetscapes everything changed. My addiction changed, my way of talking to others changed, everything changed."*

Participant 4: *"Streetscapes introduced me to this matrix programme almost two years ago which I am almost two years clean from drugs."*

Participant 8: *"I have been in Streetscapes for almost a year now. It has changed my life for the better. I still drink alcohol and enjoy myself but it is not like in the streets, when I needed it daily, daily."*

Theme 2: ***Alcohol-specific concerns***

A common theme we found running through the Questionnaire and Focus Group components was the extent to which many of the participants were against the abuse of alcohol since partaking in the rehabilitation programme offered by Khulisa/Streetscapes. They were asked if their family or friends ever expressed their worry or distress for their usage of any of the substances mentioned earlier when they were living on the streets. As the data showed there is high usage of illicit drugs such as Mandrax and Tik, however, many of them said that the substance that their families and friends were most concerned about was alcohol. This is because they reported that their behaviour altered the most when they were intoxicated due to alcohol, with it resulting in aggressive behaviour**.**

> *Participant 9: "I used to be a big alcoholic…and I used to say you can't tell me because it is not a problem…this boyfriend I have got now said to me, it's not for me to tell you, but one day you must just look in the mirror when you gesuip [get drunk] and see what I see…I saw a monster".*

Participant 13: "Ya definitely, for all..but more the abuse of mainly alcohol, I think that was my main issue"

Participant 14: "Yes, it's alcohol. Because when I drink, when I'm drunk, I'm always into fights and all that. When I am drunk my past comes and I don't want people to say anything

that's going to bother me…so he [brother] has always been concerned am I going to get better".

Theme 3: Skills development

Following on from expressing how being part of Khulisa/Streetscapes has helped them manage substance use, participants in the current study also reported that they have acquired various skills from the program. Participants 4, 5, 8, and 14 describe that they have developed soft and technical skills after joining the program (Participant 4: *"they helped me make my CV and everything."*) (Participant 4, 5, 8, 14: "*they offer computer courses…security courses…job training…social worker training.*"). Furthermore, participants 1 and 2 described that they have learned and developed vocational skills including learning farming techniques (Participant 1, 2:" Most *of my skills I learned here (at Streetscapes)…I learned how to plant vegetables, knowing everything about planting, how to lower to the ground to reach the soil…"*). Hence, the third theme we were able to identify is the participants' vocational and soft skills development. As noted in the results section that once participants join the programme, they are afforded the opportunity to be taught various skills. The participants have disclosed that they are able to receive help in the areas they desire, whether it involves how to write-up their CVs, learn computer literacy, or learning farming techniques, etc. Many of the participants had shared that through Khulisa and Streetscapes they have been given opportunities to increase their employment positions to managers, and supervisors (example: Participant 5: *"I was in Chester house plus minus three years, and while I was there, I was the house mother…I'm also the house co-ordinator at YMCA.")*. The following are statements from participants that affirm their satisfaction with the work and training opportunities they have been given since joining the programme:

> Participant 2: *"Streetscapes gives us the opportunity to learn."*
>
> Participant 5, 8, 14: *"If you want to get your matric certificate, they do help you get it."*

Theme 4: Key recommendations from the participants on the way forward

The findings from the focus group indicate that Khulisa/Streetscapes is an effective programme in terms of helping homeless people manage substance use and improving skills development. It is important to note that the rest of the participants, who had mostly been in the programme for longer, felt as though they received more than enough money and that their lives had significantly improved since their time living on the streets. However, a few of the participants in this study felt that there is more that the program should offer. For

example, for those participants who are employed by Khulisa/Streetscapes they recommended that the programme managers increase the monthly stipend they get. Participant 14 below expresses the reason the participants are dissatisfied with the amount of their stipend money is because it does not appear to cover extra personal expenses. They have shared that they get paid according to their work positions, and once their rent expenses have been deducted there is very little in order to provide for themselves in terms of extra groceries, toiletries, and work-related clothing. (Participant 14: *"I'll rather not do my or have toiletries, but my food, my stomach, I must have food."*).

The following are statements from a participant confirming these issues, and potential improvements within the programme.

Participant 14: *"It's not enough, because there's food they must buy, transport costs and the stipend is very small".*

Participant 3: "*Most of us, our money is small."*

Discussion

There is a wealth of research that shows there is a high risk of substance use and TBI among the chronically homeless population in developed countries (Cusimano, et al., 2021). In the current study we aimed to investigate the frequency of substance use in a sample of chronically homeless individuals living in Cape Town. Second, we aimed to investigate the prevalence of TBI in the same sample. Third, we aimed to investigate whether there was a relationship between a history of substance use and a history of TBI in this sample. Last, we aimed to explore the effectiveness of the vocational intervention in which these individuals are currently participating in at Khulisa/Streetscapes, in decreasing their use of substances. For aim one, we hypothesised that there would be a high level of risk among the chronically homeless in terms of substance use. Additionally, for our third aim, we hypothesised that there would be a significant association between history of substance use and history of TBI. We discuss each of these aims and hypotheses below.

Questionnaire component

Aim 1: Substance use frequency

Many of the participants reported in the "other" section of the questionnaire that they have done Mandrax and/or tik. Mandrax is a drug which comes in a small tablet that slows down the central nervous system and has sedative effects, thus it is a "downer" drug that induces a sense of calmness (Peltzer et al., 2010). It is also known as Quaalude and is an illegal drug due to high abuse, addiction, and the high potential for dependence. It is often

also referred to as “buttons” because while it is supposed to be taken orally, users often inject or smoke it for rapid effects, or in South Africa, it is common practice amongst users to crush the pill and mix it with cannabis before smoking this mixture through the neck of a broken glass bottle (Peltzer et al., 2010). Tik is a type of methamphetamine, it is a powder that is smoked most often through an empty light bulb, where a lighter heats the bulb and the fumes are inhaled (Peltzer et al., 2010). Because we are working within the South African context, we found that Mandrax is considered one of the leading drugs in South Africa’s era of unemployment because of its historical background rooted in colonialism during the apartheid era (Hunter, 2022).

One of the aims of this study was to evaluate the frequency of substance use among the chronically homeless sample . Results indicate that there are four prominent substances used among this sample group including tobacco, alcohol, marijuana and Mandrax/Tik. Over 86% (12/14) of the participants had used Mandrax or Tik while living on the street. The level of substance use risk among this population sample supports our first hypothesis that there are high levels of substance use among our sample. Additionally, studies also suggest that the use of depressant drugs, such as Mandrax/Tik are commonly used among the homeless population (Ibabe, et al., 2014). These studies indicate that depressant (opiate) drugs are used mainly to reduce arousal and stimulation, to calm nerves and relax muscles. Research also noted that high-risk level rates of depressants (Mandrax/Tik), alcohol and cannabis among this sample population may serve as a coping mechanism among homeless people (Fromke, 2018; Wilson, et al., 2022).

Our results showed that there is a low usage of drugs such as cocaine, hallucinogens, inhalants, and sedatives. Participants reported that one of the reasons for this is the higher price one must pay for these drugs, as well as the accessibility to these drugs while living on the street. To illustrate this point further, many of the participants did not know what several of these drugs were when asked about them. However, those that did use inhalants said they had sniffed glue, while those who reported using sedatives said they had been prescribed them by doctors. Overall, it was found that substance use among this chronically homeless sample was very high before joining the Khulisa/Streetscapes programme.

Aim 2: TBI prevalence and severity

The second aim of our study was to investigate the prevalence of TBIs among our sample population of previously chronically homeless individuals. We made use of the TBI section of the CHAT screening tool which helped us to assess the TBI prevalence among this

chronically homeless sample, as well as to assess the mechanism of obtaining the TBI, and the outcomes of this injury. The results of our investigation showed that there were high rates of TBIs in the sample. As per our results, 93% (13/14) participants reported having sustained at least one TBI in their lifetime, as a result of various mechanisms. The results also indicate that 69% (9/13) of the participants who had sustained a TBI had suffered multiple TBIs, ranging between 3-6, mostly sustained as a result of fights/assaults, falls, and being struck by various objects. According to the results 69% (9/13) participants had also sustained a loss of consciousness, which is a significant indication of the severity of the TBI sustained among our sample population; the longer the duration of loss of consciousness, the more significant the injury (Corrigan, et al., 2018). Many also reported being very dazed and confused after a fall, however, it was difficult to know whether this was symptomatic of their mental state prior to the fall or the TBI itself. Results also indicate that 33% (3/9) of the participants lost consciousness as a result of these falls, clearly indicating the severity of this mechanism and the potential effects of substance use on TBI prevalence. Many participants also disclosed that they did not receive any medical help from hospitals and clinics, with many of the participants citing that they would treat themselves with local methods, but noting that this was not always effective and sometimes led to infection.

Aim 3: Relationship between TBIs and Substance Use

Our third aim was to establish the relationship between the history of TBIs and the history of substance use among our sample population. In order to do this, we first needed to collect relevant data on the prevalence and severity of TBIs among the sample, as well as collect information on the frequency of substance use of this same sample group. Through this process we found that there was a high prevalence of TBIs, as well as significant substance usage within the chronically homeless sample of individuals that we interviewed. The results of the correlation showed that the association between the number of TBIs sustained and the frequency of use of various substances the participants were using before joining the Khulisa/Streetscapes programme, was not significant.

As mentioned previously, there are multiple mechanisms of TBIs reported by the participants (even though sustaining TBIs through falls while under the influence of substances was common), and this may contribute to the lack of association here. The participants have also disclosed that some of these TBIs preceded substance use. These results are in line with literature that shows that TBIs among the homeless are often associated with risky behaviours such as violence, substance use and a lack of adequate

health care (Cusimano et al., 2021), in other words, not only substance use. Hence, our hypothesis that there would be a positive relationship between degree of substance use and rate and severity of TBIs among our sample group was not supported.

Focus group component

All the participants were unanimous in their agreement that the programme has helped them overcome their addictions. A few of the participants were still in the programme but nonetheless already spoke highly of its effectiveness in decreasing their substance usage. The participants were all very grateful for the steady supply of income from the programme, as it gave them a sense of financial security. As reported in the results, there is also a wide range of skills that homeless individuals can learn by being involved in the vocational intervention at Khulisa/Streetscapes.

The themes and the responses from all the participants who took part in the focus group (as reported in the results) indicate that the Khulisa/Streetscapes programme is effective in helping the individuals in our sample. The programme has provided them with the necessary skills and resources to effectively get off the streets, become employable by process of receiving vocational training and acquiring the necessary certificates or diplomas needed for certain qualifications. Studies also affirm that in order to effectively help the homeless population it is essential to provide shelter, a safe living and working environment, programmes and strategies in motivation and resilience, as well as establishing peer leadership among the population (Ibabe, et al., 2014).

As mentioned previously in this paper, our research study focused on using theories of planned behaviour and self-efficacy in establishing a comprehensive knowledge and understanding of the potential effects of Khulisa/Streetscapes' vocational intervention. These theories have been used to assess Khulisa/Streetscapes' vocational intervention in how it aims to reduce delinquent behaviours, such as substance use, among individuals engaged in the intervention, from their perspective (Hagger et al., 2022). Self-efficacy theory aims to incorporate strategies and techniques to facilitate intention, initiation and persistence at behaviours that help people successfully cope with their environment and various challenges that may come their way (Maddux, 1995). As can be seen in the findings of our qualitative data, Khulisa/Streetscapes has successfully integrated these strategies and techniques in the form of the matrix programme that has helped the participants manage their substance use addictions. Our results support theory that states that having the ability and skill to effectively and intentionally transform behaviours and its resultant outcomes motivates individuals to

seek similar success given their efforts towards the process (Guarnaccia & Henderson, 1993). This statement is also supported by the positive response's participants had regarding Khulisa//Streetscapes' aid in helping them build and refine their soft and vocational skills in order to earn a living.

When the participants were asked what improvements could be made to the programme, three participants agreed that although they were grateful for the steady income, that they hoped that they could potentially receive a higher stipend. These 3 participants had all been in the programme for around six months. The reason they were unhappy with the amount of money they were receiving is because once they have paid their rent, they do not have a lot of money left, especially those who have children that they need to provide for. As stated in the results section, the rest of the participants, who had mostly been in the programme for longer, felt as though they received more than enough money and that their lives had significantly improved since their time living on the streets. This is because they are given adequate shelter, a monthly stipend, and depending on their housing location they have meals provided for them two to three times a day and are taught any important skills they wish to gain. Thus, the results from the focus group discussion showed the effectiveness of the vocational intervention at Khulisa/Streetscapes for the participants in our study.

Limitations

Small sample size and lack of control group

One limitation that we had in our study was the limited number of participants that met the inclusion criteria and who agreed to participate in the study. Having 14 participants meant that it restricted the generalisability of our findings on the prevalence of TBIs and the frequency of substance use among the chronically homeless population, as well as the ability to run inferential statistics. We acknowledge the role that our inclusion criteria (e.g., language restrictions) played in limiting the sample. Future research needs include a larger sample size, with fewer limiting inclusion criteria, so that the chronically homeless population is accurately represented in the data. The sample is therefore underpowered to answer some of the questions posed. We also acknowledge the absence of a suitable control group (from the general population) to which to compare rates of TBI, for example. Given that TBI rates are generally high in the general South African population, it would be important to include a control group to which to compare rates of TBI in the chronically homeless sample.

Heterogeneity in participation in the intervention

Due to the low number of participants, we were unable to homogenise the sample in terms of certain exclusion criteria. The result of this was that we had some participants who had been in the programme at Khulisa/Streetscapes for over three years, while others had only been in the programme for around six months. This meant that some of the participants had only recently moved into homes and had also only recently started the matrix programme for drug rehabilitation, thus recent drug use was still high. However, those that have been in the programme for over three years and have a stable home have used very few drugs in the past few months and so would not accurately represent the drug usage of the chronically homeless who live on the street. Future research, which includes a larger sample size, could investigate the effect of the Khulisa/Streetscapes intervention at different stages of the program.

Self-report issues

This study relied on self-report as the method of data collection as there was little access to participants' medical records and history of injuries. This means that the data received is privy to their honesty and trust in us as the researchers. In previous studies, researchers have found that self-report measures can cause reliability problems and it is better to have some collateral information when exploring TBIs (Nkoana et al., 2020). Future studies should ensure that participants fully understand their right to anonymity and should also aim to gain some medical records of the homeless if available.

Summary and Conclusion

In summary, substance use and TBIs are prevalent among the participants in our sample group. Among the participants in our study, substance use frequency was high before vocational intervention involvement, as it is confirmed that all participants engaged in substance use behaviours while living on the street. This study also indicates that there was a high prevalence of TBIs among the participants, but that the correlational relationship between the degree of substance use and TBI prevalence variables was not statistically supported. There are many confounding variables that might affect the relationship between these variables, however, our study was too underpowered to explore those reasons and further research is needed.

Our qualitative findings on the effectiveness of Khulisa/Streetscapes suggest that the programme is effective in its aims to reduce substance use among the homeless population and equip them with the necessary skills needed for future employment. Even though the vocational programme has achieved its aims, some participants in this study feel there is

room for improvement in providing a higher stipend income to accommodate the participants' other personal expenses; however, these sentiments were not shared by those who have been in the program for much longer. Given the contextual vulnerabilities in our context, a few of which were discussed in our study, and the vulnerabilities of chronically homeless individuals, even preliminary evidence of effectiveness of programs such as Khulisa/Streetscapes to reduce maladaptive behaviours such as substance abuse, should be recognised and explored.

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Appendix A

CHAT & ASSIST QUESTIONS

(Part of the Measures section)

CHAT Questions

(TBI)

1. Have you ever had an injury to the head that caused you to be knocked out and/or dazed and confused? E.g., from a fall, blow to the head (including boxing or fighting) or road traffic accident.

   If yes, please explain:

2. How many times have you been knocked out and/or dazed and confused?

   For each occasion ask how it happened.

3. When was the last occasion?

4. Did you seek any medical attention after being knocked out and/or dazed and confused?

   If yes, what treatment did you receive? Did you have to stay in the hospital?

5.

	Not experienced at all	**Have experienced but not a problem**	**A mild problem**	**A moderate problem**	**A severe problem**
Headaches					
Feelings of Dizziness					
Nausea and/or vomiting					

Forgetfulness, poor memory					
Poor concentration					
Confusion					
Fogginess					
Difficulties recalling daily events					

ASSIST QUESTIONS:

(Substance use)

1. Have you ever partaken in substance use activities in their lifetime?

(Responses Q1 = 'yes', 'no')

2. To the best of your ability to remember, which substances have ever been used in your lifetime?

3. What is the frequency of health, social, legal or financial problems related to substance use that you have experienced in your lifetime?

4. What is the frequency with which use of each substance has interfered with role responsibilities you may have had at that time?

Appendix B

Khulisa/Streetscapes FOCUS GROUP QUESTIONS:

1. How long have you been a part of the programme at Khulisa/Streetscapes?
2. Tell us about your experience at Khulisa/Streetscapes with this intervention program?
    a. Overall, what did this intervention programme consist of?
3. Please tell us about your current living situation?
4. What was your life like before coming to Khulisa/Streetscapes?
5. Do you feel that the Khulisa/Streetscapes programme has equipped you with the correct tools to overcome substance use?
6. Have Khulisa/Streetscapes informed you of the negative outcomes associated with substance abuse?
7. Have you reduced your substance usage or stopped using substances since joining the Khulisa/Streetscapes intervention?

Appendix C

UNIVERSITY OF CAPE TOWN

Department of Psychology

University of Cape Town Rondebosch 7701 South Africa
Telephone (021) 650 3417
Fax No. (021) 650 4104

18 August 2022

Toni Adams and Timothy Bean
Department of Psychology
University of Cape Town
Rondebosch 7701

Dear Toni and Timothy

I am pleased to inform you that ethical clearance has been given by an Ethics Review Committee of the Faculty of Humanities for your study, *Chronically Homeless People: Investigating substance use, history of TBI and the effects of a vocational investigation.* The reference number is PSY2022-033.

I wish you all the best for your study.

Yours sincerely

Lauren Wild (PhD)
Associate Professor
Chair: Ethics Review Committee

Appendix D

STREETSCAPES
GROWING BETTER LIVES

KHULISA
SOCIAL SOLUTIONS
Reinventing lives

7 July 2022

TO WHOM IT MAY CONCERN

This is to confirm that Khulisa Social Services is aware of the planned research study by a UCT Psychology team:

Title: "Chronically Homeless People: Investigating substance use, history of Traumatic Brain Injury and the effect of a vocational intervention"
Researchers:
A/Prof Leigh Schrieff-Brown,
Toni Adams (ADMTON002) and
Tim Bean (BNXTIM001)

Khulisa gives permission for the students to conduct the research involving clients of the Streetscapes programme.

Regards

Andrew Tulloch
Operations Manager

Appendix E

UCT Department of Psychology

Consent Form

Informed consent for you to participate in research

You are being invited to take part in a research study. This form provides you with information about the study and asks for your permission to take part in the research study. Your participation is entirely voluntary. Before you decide about taking part, read the information below and if you have any questions, please feel free to contact one of the principal investigators. You will not be disadvantaged in any way by participating or not participating in this study.

1. **Title of Research Study**

   Chronically Homeless People: Investigating substance use, history of Traumatic Brain Injury and the effects of a vocational investigation

2. **Principal Investigators and Contact Number**

   Honours in Psychology (students)
   Toni Adams
   Tim Bean
   Department of Psychology
   University of Cape Town
   Supervisor
   A/Prof Leigh Schrieff-Brown
   Department of Psychology
   University of Cape Town
   021 650 3708

3. **Source of Funding or Other Material Support**

   University Research Committee funds

4. **What is the reason for this research study?**

   The purpose of this research is to investigate the history of head injuries and substance use in the homeless population. It is also to understand the effect of rehabilitation and intervention programmes on the behaviour and lives of the homeless who have been a part of the programme at Khulisa/Streetscapes for at least 3 years.

5. **What will be done if you take part in this research study?**

   We will ask you a few questions about your history of drug and alcohol use and about your experience and history with head injuries. Lastly, if you would like to continue with the study and be part of a small (focus) group discussion, we will ask questions about how the intervention that you are enrolled in at Khulisa/Streetscapes for the last three years has impacted your life, substance use and homelessness.

6. **If you choose to participate in this study, how long will you be expected to participate in the research?**

   Completing the various questionnaires and the focus group with us should not take longer than two hours in total to finish. You are allowed to take breaks at any time during the research process.

7. **How many people are expected to participate in the research?**

   We will invite everyone who has been at Khulisa/Streetscapes and participating in the program for at least 3 years or longer to complete the questionnaires with us. Then, 10-15 of those people who would like to continue will be invited to participate in a group discussion about the Khulisa/Streetscapes intervention. If there are more than 15 people who show interest, we can form another group.

8. **What are the possible discomforts and risks?**

   There is a small risk associated with participation in this study, as asking about your experiences of head injuries may potentially cause some feelings of distress. There is also a risk that asking about drug and alcohol usage may cause discomfort. Should you get tired during the study, you will be allowed to rest. If you wish to discuss any information about the study, what you will be asked to do, or any discomfort you may experience, you may contact the principal investigators listed in #2 of this form.

9. **What are the possible benefits to participating in this study?**

   There are no direct benefits to participating in the study, but it will hopefully benefit Khulisa/Streetscapes in understanding how their vocational intervention programme impacts their clients, and whether they need to make changes to help improve those in

similar circumstances to you.

10. If you choose to take part in this research study, will it cost you anything?

Participating in this study will not cost you anything.

12. Will you receive compensation for taking part in this research study?

You will be given a R50 shopping voucher , once you have completed participation in each part of the study and pizza and juice will be provided after the focus group session as a token of gratitude for giving up your time to partake in the study.

13a. Can you withdraw from this research study?

You are free to withdraw your consent and to stop participating in this research study at any time with no penalty.

If you have any questions regarding your rights in this research, you may contact Rosalind Adams in the Psychology Department. Her email address is rosalind.adams@uct.ac.za or you may contact her via telephone – 021 650 3417.

Alternatively, if you have any questions about the study, you may contact the supervisor (A/Prof Leigh Schrieff-Brown) at leigh.schrieff-brown@uct.ac.za, or student researchers at:

ADMTON002@myuct.ac.za (Toni Adams),

BNXTIM001@myuct.ac.za (Tim Bean).

13b. If you withdraw, can information about you still be used and/or collected?

Information already collected may be used, if permission is granted by you. We will ask you about the use of your information, if you decide to withdraw from the study.

14. Once personal and performance information is collected, how will it be kept secret (confidential) in order to protect your privacy?

Only certain people have the right to review these research records. These people include the researchers for this study. Your research records will not be released without your permission unless required by law or a court order. All the information you give will be strictly confidential and will not include your name or information that could identify you directly, when shared in any reports about the data.

15. What information about you may be collected, used and shared with others?

The information gathered from you will be about your race, age, gender and other important information relevant to the study. If you agree to be in this research study, it is possible that some of the information collected might be copied into a "limited data set" to be used for other research purposes. If so, the limited data set may only include information that does not directly identify you. For example, the limited data set cannot include your name, address, telephone number, ID number, or any other numbers or codes that link you to the information in the limited data set.

16. Signatures

As a representative of this study, I have explained to the participant the purpose, the procedures, the possible benefits, and the risks of this research study; and how the participant's performance and other data will be collected, used, and shared with others:

_____ _____

Signature of Person Obtaining Consent and Authorization **Date**

You have been informed about this study's purpose, procedures, possible benefits, and risks; and how your performance and other data will be collected, used and shared with others. You have received a copy of this form. You are aware that you may ask questions before you sign, and you have been told that you can ask other questions at any time. You voluntarily agree to participate in this study. You hereby authorise the collection, use and sharing of your performance and other data. By signing this form, you are not giving away any of your legal rights.

_____ _____

Name and Signature of Person Consenting and Authorising. **Date**

17. Participation in the focus group part of the study.

Once the questionnaire part of the study has been conducted would you like to be contacted regarding the focus group part of the proposed research study (Please circle your answer).

YES OR NO

17. **Permission to record the discussion in the focus group.**

    Because the focus group will include a number of participants, we need to ensure that we correctly collect all the information. For this reason, we would like to make use of audio recordings to keep record of the discussion.

    You have also been informed that the focus group discussions will be recorded and have been informed of the reasons for this component of the study. You are aware that you may ask to stop the recording at any stage during the interview.

    You voluntarily agree to allow this recording to take place and authorise the use of this recording solely for the purposes of researchers for further analysis. By signing this form, you are not giving away any of your legal rights.

    _____ _____

Appendix F

Referral sources and options for all participants.

Low cost or free counselling options:

1. **South Africa Depression and Anxiety group (SADAG)**

   Contact number: 011 234 4837

   Email: zane@sadag.org

   You may also SMS this number for a counsellor to call you back: 31393 or 32312

   WhatsApp: 076 882 2775

   24-hour helpline: 0800 456 789

   Suicide hotline: 0800 567 567

2. **The Counselling Hub**

   Contact number: 021 462 3902

   Email: info@counsellinghub.co.za

3. **Cape Mental Health**

   Contact number: 021 447 9040

   Email: info@cmh.org.za

4. **Groote Schuur Neuropsychology Clinic** (difficulties related to head injuries)

   Please contact the researchers so that you may be referred.

Appendix G

UNIVERSITY OF CAPE TOWN

Department of Psychology

Collecting data on substance use, history of traumatic head injury and the effects of a vocational intervention

You are being invited to take part in this research study. This form provides you with information about the study.

What the study is about and what we will ask you to do:

The study will be conducted by Toni Adams and Tim Bean, both Psychology Honours (4th year) students at the University of Cape Town (UCT). We want to study the history of head injuries and substance use in the homeless population. If you decide to take part in the study you will be asked to do the following:

- A one-on-one session where you will be asked about your history of drug and alcohol use and about whether you have ever experienced a head injury. This session should take around 45 minutes.

After that session, we will ask you if you also want to take part in a group discussion. This is called a focus group.

- In the focus group discussion, we will ask questions about how the intervention that you are enrolled in at Khulisa/Streetscapes for the last few years has impacted your life, substance use and homelessness.

Benefits:

This research will help us to improve our understanding of the hardships that come with being homeless and how having experienced a head injury or possible head injury and

the use of substances has changed and impacted your life. We also want to understand how you have experienced being involved with Khulisa and Streetscapes. We also hope it will benefit Khulisa and Streetscapes in understanding how their programme impacts you, and whether they need to make changes to help improve those in similar circumstances to you. Should you get tired during the study, you will be allowed to take breaks and we will provide a small snack.

Compensation (for your time)

If you agree to being part of the one-on-one session, we will give you a R50 voucher from Pick n' Pay for your time. If you also agree to being part of the focus group you will be given another R50 voucher for your time. We will also provide a small lunch (pizza and juice) for those who take part in the group discussion.

Voluntary participation, confidentiality and the right to withdraw:

Your participation is entirely up to you and you are free to stop participating in this research study at any time. Your relationship with Khulisa, Streetscapes and your place of work will not be affected if you choose not to take part in this study. It is important to note that none of your personal answers will be shared with Khulisa, Streetscapes or with those at the places you work, if you do take part in the study.

Please let Jesse Laitinen and Shelley Segal know if you would like to participate.

We look forward to working with you.

Regards,

Tim and Toni

Appendix H

Participant demographics, TBI history and substance use

Participant 1. Participant 1 is a 37-year-old male who has been a part of the programme at Khulisa/Streetscapes for four years. He is currently working and staying on the farm in Kuils Rivier, Western Cape. When looking at his history of TBI, he has only sustained 1 in his lifetime, due to a fight with another homeless person. He did not lose consciousness from this knock to the head and did not go to the hospital as he did not feel it was serious enough. In terms of alcohol and substance use, he consumed alcohol, tobacco, marijuana, inhalants (glue) and mandrax regularly while homeless, however, he has not done glue or mandrax in the past 3 months.

Participant 2. Participant 2 is a 50-year-old female who is also currently working and staying on the Khulisa/Streetscapes owned farm in Kuils Rivier. She has been a part of the Streetscapes and Khulisa programme for four years and was one of their first ever clients to join the programme. She is the only participant in our study who did not report having a TBI in her life. Although she noted she had been in fights while homeless, none of them had resulted in a TBI, at least to her knowledge. She has used tobacco, alcohol, marijuana and mandrax in her lifetime. However, in the last 3 months she has not used any substances; she has only smoked cigarettes.

Participant 3. Participant 3 is a 51-year-old male who has been a part of the Khulisa/Streetscapes programme for four years and is housed at the farm in Kuils Rivier. He reported that he has three major TBIs which he could remember, with two of these occurring as a function of fights where he was hit by other people, and assaulted with weapons to the body and head. A fall when drunk and on drugs was the cause of the other TBI. In the case of the most severe of his TBIs, he reported losing consciousness for around 30-60 minutes and being dazed and confused after waking up. However, he did not go to the hospital after any of the TBIs he sustained. He is one of only two participants who has never done mandrax or tik, however, he has used alcohol, tobacco and marijuana. When looking at the last 3 months though, he has not consumed any alcohol or drugs.

Participant 4. Participant 4 is a 33-year-old male who has been a part of the Khulisa/Streetscapes programme for over three years and is staying at the house in District Six. He first worked for Streetscapes in the garden in Roeland Street, and now works for an outside business who is hiring some of the Khulisa/Streetscapes clients. He has sustained just one TBI in his life and this was from a motor vehicle accident. He reported feeling dazed and confused after the accident, however, he did not lose consciousness and he did not go to the hospital. When reporting on his drug and alcohol use in his lifetime, he confirmed that he has

consumed alcohol, marijuana, tobacco, amphetamines and mandrax. Since joining the programme, however, he has overcome his addiction and now only drinks alcohol and smokes cigarettes.

Participant 5. Participant 5 is a 48-year-old female who has been a part of the Khulisa/Streetscapes programme for three years and has been living at the house in District Six where she has been running the home. She has recently moved across to the YMCA. She reported having sustained one TBI while she was homeless caused by a fall when she was under the influence of drugs and alcohol. She reported feeling dazed after the fall, but did acknowledge that this confusion could have also been related to her state at the time. She also went to the hospital to check the seriousness of the TBI. Her drug and alcohol use in her life is high, as she has used tobacco, alcohol, marijuana, cocaine, amphetamines, opioids, mandrax and tik. However, since undergoing rehabilitation with Khulisa/Streetscapes, she only drinks alcohol irregularly and smokes regularly in the last 3 months.

Participant 6. Participant 6 is a 50-year-old male who has been a part of the Khulisa/Streetscapes programme for over three years and is currently living at the house in District Six. He reported having sustained five TBIs in his life due to a number of different causes, and most of them fairly severe. He reported being involved in a number of fights where he was hit in the head, and one in which he was hit with an iron rod in the back of his head. He does not know the length of time he was unconscious for, however, in that time he was taken to the hospital where he woke up 12 to 24 hours later. He did not receive major treatment afterwards, as he left the hospital soon after regaining consciousness as he had been involved in criminal activity in the past, and did not feel safe in the hospital. When looking at his drug and alcohol usage, he confirmed that he had done marijuana, alcohol, tobacco, inhalants (glue), mandrax and tik. However, like others, he has cut down his usage to just tobacco and alcohol within the last 3 months.

Participant 7. Participant 7 is a 49-year-old male who has been staying at the District Six house and has been in the Khulisa/Streetscapes programme for over three years. He has been diagnosed with foetal alcohol syndrome (FAS), and thus, struggled a bit with the interview process. However, he still managed to answer the questions and provide a different point of view. He reported sustaining four TBIs in his lifetime, with the most severe occurring when he was a child and he was hit by a motorbike, but did not get any official medical treatment. The other TBIs he sustained were during fights and other assaults while growing up. He went to the hospital when he was stabbed in the face and abdomen. He has

consumed alcohol, tobacco, marijuana and mandrax in his life, however, when reporting on the last 3 months he notes that he no longer does mandrax. He does still consume the other substances on a weekly basis.

Participant 8. Participant 8 is a 36-year-old female who has been a part of the Khulisa/Streetscapes programme for one year, and is currently staying at Roeland gardens. She reported having experienced three serious TBIs, the last major one was sustained during a drunken fight 6 years ago. She reported that the fight resulted in her hitting her head against the pavement, where she experienced a loss of consciousness. She recalled having passed out once her head hit the pavement, and when she eventually gained consciousness people who witnessed the fight informed her that she had passed out for 4 hours. The remaining TBIs she sustained were due to similar circumstances that left her dazed and confused but she remained conscious. She did not receive any medical attention for any TBIs sustained. Participant 8 disclosed that she partook in recreational substances such as alcohol, marijuana, buttons, tik, opioids and sleeping pills. She reports that she no longer partakes in these substances except for marijuana (weekly), cigarettes (daily), and alcohol (weekly). She disclosed that she finds it challenging to stop/reduce her alcohol intake but the matrix programme is helping.

Participant 9. Participant 9 is a 58-year-old female that has been in the Khulisa/Streetscapes programme for 11 months where she is currently living in District six house. She has sustained threeTBIs. Two of the reported incidents were a result of falls, one when she was sober and another when she was drunk. The participant notes that both incidents left her dazed and confused but she suffered no loss of consciousness. The third incident was when she was 14 years of age, and it was due to a sports injury that left her unconscious for 5-30 minutes. She received no medical attention for any of the reported TBI incidents. The participant reported to have engaged in the following recreational substances; alcohol, marijuana, cocaine, amphetamines, hallucinogens, opioids, mandrax, tik, and buttons. She reports that she still partakes in marijuana, tik and buttons on a regular basis (weekly/monthly), and cigarettes (daily) but being a part of the programme has helped reduce the frequency with which she uses these substances.

Participant 10. Participant 10 is a 49-year-old female that has been a part of the Khulisa/Streetscapes programme for 11 months and is currently staying at Roeland gardens. She reported that she sustained five major TBIs and the most recent one happened in 2021. She states that she only received medical attention after a drunken fight that led to being hit

over the head with a beer bottle in 2020. She reports that she was hospitalised for three weeks after this incident. The most recent incident was a fight that resulted in being stabbed in the face, and she sustained no loss of consciousness. The participant also disclosed that the other three TBIs were the result of drunken falls that left her dazed and confused but she experienced no loss of consciousness. She reported partaking in drinking alcohol (daily) before joining the programme which has now been reduced to weekly consumption, and smoking marijuana daily (this has not changed since living on the streets).

Participant 11. Participant 11 is a 36-year-old female who has been a part of the Khulisa/Streetscapes programme for 11 months and is currently living at Roeland gardens. She reported to have sustained some injuries that are not TBIs per se, but which may have an impact on the brain. For example, she reported that she fell on her ear from a fight in 2019 and sought no medical attention. The participant was also in a motor vehicle accident resulting in her back being badly injured, and even though she did not receive any medical attention there is every reason to believe she might have sustained at least a mild TBI due to the impact. The last reported injury which was a TBI was as a result of a drunken fall that resulted in a loss of consciousness. She reported that she sought medical attention for this incident and was admitted to the hospital for three weeks. The participants shared that she partakes in smoking cigarettes (daily), alcohol (weekly) and Tik (monthly). The types of substances she uses are still the same before and after joining the programme but the degree to which she uses them has decreased since joining Khulisa/Streetscapes.

Participant 12. Participant 12 is a 38-year-old female who has been in the Khulisa/Streetscapes programme for six months and is currently located at Roeland gardens. The participant has reported two instances that resulted in a TBI and both were due to falls. She recalled having fallen while drunk and another incident while sober. Both incidents had left her dazed and confused but she suffered no loss of consciousness. The most recent fall happened while she was working at streetscapes and the drunken fall happened in 2021. She reports that she did not receive medical treatment for either incident. The participant also disclosed that she partakes in smoking cigarettes and marijuana daily and drinks alcohol on a weekly basis. She previously used to use Mandrax, but stopped almost six years ago.

Participant 13. Participant 13 is a 56-year-old male who has been a part of the Khulisa/Streetscapes programme for one year and is currently based at Roeland gardens. He reports having experienced five significant TBI incidents, all of which resulted in a loss of consciousness. The last incident he can recall occurred 15 years ago and was the result of a

fight that led to being hit over the head with a beer bottle. The participant recalled having been knocked out for 10-15 minutes afterwards and woke up dazed and confused. He also recalled experiencing a loss of consciousness for around 30 minutes during three previous separate, yet similar, incidents where he was involved in physical altercations while living on the streets. The participant reported having received medical attention for all these incidents. The oldest reported incident resulting in a TBI was sports related, where he sustained a concussion. In reference to the participant's use of drugs and alcohol, he reports that he partook in all the substances listed in the ASSIST questionnaire, with the addition of mandrax, tik and cough mixtures. However, he also stated that he currently only smokes cigarettes.

Participant 14. Participant 14 is a 33-year-old female who has been a part of the Khulisa/Streetscapes programme for 11 months and is currently living at Roeland gardens. The participant reports that she sustained several TBI-related injuries and sought medical attention for all except for the most recent injury. Most of the injuries were due to drunken falls and fights with other individuals, and she reported experiencing a loss of consciousness for most of these injuries. She reports that the most recent injury was the result of being hit on the head with a brick during a fight in July of this year (2022). She was informed by bystanders who witnessed the fight that she had lost consciousness for over an hour. When asked if she partook in any drug or alcohol use, she reported that she previously smoked cigarettes and marijuana, drank alcohol, used Mandrax and tik, and sniffed glue. Since being in the programme she reported that she does not partake in any of these substances any longer and is three weeks sober from alcohol.